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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,077

04/21/2005

Shigeo Ii

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09/02/2010

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EXAMINER

LEA, CHRISTOPHER RAYMOND

ART UNIT

PAPER NUMBER

1613

NOTIFICATION DATE

DELIVERY MODE

09/02/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/532,077	Applicant(s) II ET AL.	
	Examiner Christopher R. Lea	Art Unit 1613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-11 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-5, 7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application is a 371 (national stage application) of PCT/JP03/13469.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 30, 2010, has been entered.

Receipt of Amendments/Remarks filed on June 30, 2010, is acknowledged. In response to final Office Action dated February 2, 2010, applicant amended claims 6, 7, & 9 and added new claims 10 & 11. Claims 3-11 are pending. Claims 3-5, 7, & 9-11 are under examination.

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. All new rejections applied have been necessitated by applicant's amendment to the claims. They constitute the complete set presently being applied to the instant application.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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2. Claims 3-5, 7, & 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites "the food storing article composition" in line 2. The term "composition" does not find antecedent basis in the remainder of the claim. It is, therefore, unclear whether the term "composition" refers to the material that forms the article or a separate material contained in the article (i.e. a composition sitting in the bottom of a food storing article could be considered a food storing article composition). The examiner will interpret the claim as the latter for the purposes of examination; however, it would be remedial to amend the claims to remove the uncertainty. Since claims 3-5 & 9-11 ultimately depend from claim 7, they have been rejected under 35 U.S.C. 112 second paragraph as well.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 3-5, 7, & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiang (CN1146303) in view of Okada et al. (US Patent 5,985,303).

Applicant claims

Applicant claims a food storing article carrying a humidity-dependent antibacterial powdery substance containing a volatile oily antibacterial substance encapsulated by a water-soluble film-forming agent. Applicant further specifies the antibacterial substance as an isothiocyanate ester and the composition as a containing a powder vehicle.

Determination of the scope and content of the prior art (MPEP 2141.01)

Xiang teaches, as a whole, a method for encapsulating spice oils.

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Xiang teaches a method for manufacturing microcapsules containing a spice oil, specifically garlic oil (a volatile oily antibacterial substance) as a core of a microcapsule formed by edible gum (a water-soluble film forming agent) (all in Example 2 pages 9-10, and generically in 1st paragraph, page 6). Xiang further teaches that the composition resulting from the method may be in a powdery form (1st paragraph, page 6). Xiang teaches that acacia gum (synonym for gum arabic) is among the possible membrane-forming edible gums for use in the invention (1st paragraph, page 6).

As to the claimed humidity-dependent release behavior, where the claimed and prior art products are substantially identical in structure or composition, or are produced by substantially identical processes, a *prima facie* case of obviousness has been established. Further, The U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that a subsequent applicant may present previously unmeasured characteristics. When as here, the prior art appears to contain the exact same ingredients and applicant's own disclosure supports the suitability of the prior art composition as the inventive composition component, the burden is properly shifted to applicant to show otherwise. Absent evidence to the contrary, the prior art composition must possess the claimed humidity-dependent release behavior, since it is produced by a process substantially identical to the claimed composition (See MPEP § 2112.01).

**Ascertainment of the difference between the prior art and the claims
(MPEP 2141.02)**

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The difference between the teachings of Xiang and the instant claims is that Xiang does not teach allyl isothiocyanate as the active agent nor putting the poweery substance in a . This deficiency in Xiang is cured by the teachings of Okada et al.

Okada et al. teach, as a whole, a powdery shelf-life extender for food use.

Okada et al. teach that allyl isothiocyanate is the preferred active ingredient in the powdery composition (column 2 lines 45-53 and claim 4). Note that the limitation a “food storing article” is intended use and met as long as the structure is capable of performing that function; as such the examiner has interpreted a “food storing article” to be any item capable of carrying the powdery antibacterial substance and an item of food. Okada et al. teach employing the powdery shelf-life extender composition in a package (i.e. container, column 4, lines 1-35). Okada et al. teach that starch is among the possible polysaccharides for use in the matrix, and that multiple matrix substances are possible in the composition (column 2 line 64 through column 3 line 12). A combination of starch and another polysaccharide allows the starch to act as a powder vehicle.

**Finding of *prima facie* obviousness
Rationale and Motivation (MPEP 2142-2143)**

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to employ allyl isothiocyanate as taught by Okada et al. in the microencapsulation technology as taught by Xiang and produce the instant invention. The skilled artisan would have been motivated to incorporate allyl isothiocyanate as the spice oil in the method of Xiang because allyl isothiocyanate is an

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oily extract of horseradish or mustard (spices) and Xiang teaches that any spice oil is useful to be microencapsulated. Common sense (as well as Okada et al.) would lead the skilled artisan to collect the resultant powdery substance in a container for storage purposes.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in using allyl isothiocyanate in the microencapsulation method and producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

In light of the forgoing discussion, one of ordinary skill in the art would have concluded that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

Response to Arguments

7. Applicant's arguments filed June 30, 2010, have been fully considered but they are not persuasive. Applicant argues that one of ordinary skill in the art when considering the references as a whole would not have been 1) motivated to combine them and 2) able to produce the claimed invention with a reasonable expectation of success based on this combination. This examiner does not find these arguments convincing.

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As to 1), applicant argues that Xiang is directed to preserving volatile spice oils, that Okada is directed to food preservation by emanation of allyl isothiocyanate, and that these two functions (preserving and emanation) are in direct opposition to one another. The examiner disagrees, in fact, the examiner finds that the “high storage tolerance” described by Xiang (paragraph spanning p 7 & 8) is exactly what is desired by Okada stating “[i]n order that the freshness of food may be maintained, it is necessary that a constant rate of emanation and an effective concentration (2-3 ppm) be maintained over an extended period of time” (col1, lines 49-53). Such teaching from Okada motivates one of ordinary skill in the art to seek out a composition that can leach only a low level of compound over a long period of time, which, the examiner contends, is the very definition of high storage tolerance. The examiner believes that the “retention rate” referenced in Xiang refers to the amount of volatile oil that was not lost or damaged in the manufacturing process, not to the amount of oil retained over an unspecified storage period as applicant appears to be arguing. Regardless, Okada and Xiang seek to solve the same problem (albeit with different ultimate goals) of having a volatile spice oil not be released too quickly; therefore the skilled artisan would have been motivated to combine the teachings of the references.

As to 2), the applicant’s argument appears to be based on the incompatibility of the references as the applicant asserts that “if Xiang is modified to include the isothiocyanate ester and food storing packaging material from Okada as alleged by the Office Action, then one of ordinary skill in the art would modify the product of Xiang to include the isothiocyanate acid compound-matrix as taught in Okada.” The examiner

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fails to see how and why the applicant arrived at this logical conclusion, unless one proceeds from the assumption that the references are not combinable due to different functions. As the examiner has addressed this argument above, the examiner is similarly not convinced by it here.

The expected result remains the same; an article carrying an antibacterial volatile oil-containing powdery composition is made in the absence of evidence to the contrary. No unexpected results have been presented. Applicant's arguments are not persuasive, and the rejection under 35 U.S.C. §103(a) is maintained.

Allowable Subject Matter

8. Claims 10 & 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Though it appears that applicant has attempted, through the most recent amendment, to define the invention as excluding the embodiment of a container with the humidity-dependent antibacterial powdery composition sitting in the bottom; the examiner does not believe this attempt has been successful. Based on his reading of the specification, the examiner believes that the best way to eliminate this embodiment and place the claim in better condition for allowance would be to recite in claim 7 that the "article comprises a resin into which a humidity-dependent antibacterial powdery composition has been mixed, said humidity-dependent antibacterial powdery composition comprising...". Such amendment might also require adjustment of claims

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10 & 11, merely to reflect that the resin coats the article in claim 10 and that the powdery composition is uniformly dispersed in the resin in claim 11.

10. As to claims 6 & 8, which are currently withdrawn, as the examiner has previously stated, they will be rejoined if they are commensurate in scope with allowable claims. In its current form, claim 6 does not make the article of claim 7, but rather the humidity-dependent antibacterial powdery composition part of claim 7. The examiner believes this could be corrected by amending claim 6 to add a step of mixing the powdery composition into a resin which is formed into or coated onto an article.

Conclusion

Claims 3-5, 7, & 9-11 are rejected. Claims 6 & 8 are withdrawn. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lea whose telephone number is (571) 270-5870. The examiner can normally be reached on Mon-Fri 7:30-3:30 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Kwon can be reached on (571)272-0581. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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/C. R. L./
Examiner, Art Unit 1613

crl

/Ernst V Arnold/
Primary Examiner, Art Unit 1613